

Peer-to-peer: An e-mentoring approach to developing community, mutual engagement and professional identity for pre-service teachers

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Professional development and reflective practice are essential outcomes of the pre-service teacher education curriculum, which the field practicum component is intended to address. However, the practicum experience can be challenging and intimidating for students, as for the first time in their course, they are separated from their lecturers and classmates, and are expected to apply what they have learnt within a real school setting. To support students completing their practicum placements as part of a one-year Graduate Diploma of Secondary Education, the authors devised a structured, peer-to-peer e-mentoring framework, facilitated by a Web 2.0-based technology model that is integrated with the university's learning management system. A community of practice (CoP) approach is adopted through which student interaction and structured dialogue, enabled by digital tools, enable professional conversations. The aim was to establish an effective peer support system offering mentoring capacities such as emotional support, feedback and encouragement that can help mitigate issues related to professional isolation and anxiety. Data collected in the form of blog posts and podcast recordings of critical incidents created by the students while on practicum, as well as post-practicum focus group discussions, attests strongly to the relevance and effectiveness of this approach to e-mentoring.

Keywords: Peer mentoring, e-mentoring, community of practice, professional learning, pre-service teacher education, teaching practicum, Wimba Voice Board, blog, podcast.

Introduction

A new model of pre-service secondary teacher education commenced with the introduction of the Graduate Diploma of Education (Secondary) program at the Canberra campus of the Australian Catholic University (ACU National) in 2005. It marked an innovative collaboration between the university and a cohort of experienced secondary education practitioners. Pre-service teachers were inducted into units in *Curriculum and Teaching Studies* through the cooperation of leading teachers from schools in the Australian Capital Territory.

Academics at the School of Education at ACU Canberra, including two of the authors of the present paper, have been preparing secondary teachers using a range of resources since 2005, and the Grad Dip Ed (Secondary) program has been designed to provide a one-year professional program for graduates from a range of disciplinary areas. Pre-service teachers typically encounter few, if any, models for teaching besides face-to-face, and this is particularly problematic in view of the increased emphasis on

technology integration. Students studying teacher education programs at ACU Canberra now undertake a range of units supplemented with web-based digital media through podcasting and streaming in order to facilitate a more collaborative educational community.

During the course of the one-year Grad Dip Ed program, students undertake two four-week long block practicum placements, during which they have the opportunity to observe the exemplary classroom practices of experienced teachers, as well as commencing teaching themselves. The goals of the practicum are not only to improve their access to innovative pedagogy and educational theory, but also to help them understand their own prior knowledge and ideas with respect to teaching, as well as to assist them in developing the habits and skills of a reflective practitioner.

In 2007, a new dimension was added to the practicum to facilitate structured peer mentoring amongst the pre-service teachers and provide them with opportunities to reflect on their practice and that of others prior to entering full-time teaching. This forms the context for the present study. While on their practicum, participants used collaborative web logging (blogging) and threaded voice discussion tools that were integrated into the university's centrally administered Blackboard learning management system (LMS), to share and reflect on their experiences, identifying critical incidents and inviting comment on their responses and reactions from their peers.

The questions that motivated the study were as follows:

1. What were the emergent themes that were the focus of discussion in the students' discourse using the blogging and voice discussion tools?
2. Overall, what elements of a community of practice (CoP) were evident in the peer-to-peer e-mentoring relationships that were formed?

Peer-to-peer (P2P) mentoring and teacher education

Definitions of mentoring abound in the literature. Huang and Lynch (1995) define mentoring as "a process of shared learning and growth that promotes mutual benefit, interaction and support for both parties" (cited in Bierema & Merriam, 2002, p. 212). The traditional understanding of mentoring consisted of two main functions: to support career development or task-orientation, or to offer psychosocial support. The former entails offering support, advice and information pertaining to a specific task or relating to career or professional development, whereas the latter involves providing both emotional and psychological support. Terrion and Leonard (2007) identify the career function as the instrumental and vocational function, while the psychosocial function has been termed the intrinsic function. Several studies have demonstrated that the psychosocial function of mentoring may be more important to younger students or professional novices than the career-related function (Allen, Russell & Maetzke, 1997; Rose, 2005).

Previous research has shown that mentoring can promote teacher effectiveness. Successful mentoring experiences can lead to beginning teachers' increased contentment with and proficiency in teaching, and, as a result, the professional development of mentored novices is more noticeable than their non-mentored counterparts (Watson, 2006; Kilburg & Hockett, 2007). In a typical mentoring relationship in teacher training, a veteran or experienced teacher is paired with a novice or beginning teacher and the former acts a role model, coach and advisor. In a review of the literature by Carter and Francis (2001), such mentoring arrangements are also presented as a process that "mitigates teacher isolation, promotes the concept of an educative workplace and ... leads to the creation of understanding of consensual norms in a school, faculty or grade team" (p. 250). They conclude that contextualised learning that is mediated by mentors in the workplace can be effective in the development of a body of practical, professional knowledge for beginning teachers.

There are now competing and varying definitions of mentoring that include lateral, hierarchical and group mentoring. As contexts vary and the world of work becomes increasingly diversified, individuals may have several kinds of mentoring relationships, or networks of support, with mentors performing different roles. An alternative to the traditional, asymmetric mentoring approach is a peer-based approach, in which there are partners of equal status (Colvin, 2007). In this form of mentoring, peers are matched equally in terms of age, experience and/or power to provide task support, counselling and friendships. As such, peer mentoring may be viewed as "a helping relationship in which two individuals of similar age and/or experience come together ... in the pursuit of fulfilling some

combination of functions that are career related (e.g., information sharing, career strategising) and psychosocial (e.g., confirmation, emotional support, personal feedback, friendship)” (Terrior & Leonard, 2007, p. 150).

Learning from peers is not a new phenomenon; mentoring is often linked to collaborative and cooperative learning as it shares features in common with these strategies, such as active, reciprocal helping behaviours amongst groups or matched dyads. For the purposes of this paper, we define peer mentoring as “the acquisition of knowledge and skill through active helping and supporting among[st] status equals or matched companions” (Topping, 2005, p. 631). Research has found that the forms of interactions that occur between peers are qualitatively different from those that occur between expert and novice, or teacher and student. More recent research indicates that peer learning and mentoring relationships, in which the cognitive capabilities of participants are similar, can offer both cognitive challenges as well as support, because both parties are more likely to engage in mutual dialogue and shared activities. Essentially, in a peer mentoring relationship, there is agreement on communication and reciprocity, which may involve meetings, phone calls, email and/or other forms of communication in order to facilitate the exchange of ideas and the provision of feedback and support. For both parties, this is a developmental relationship with the purpose of supporting the individuals to achieve a goal (e.g., to learn more about the profession and develop their skills as teachers, as in the present study).

For novice professionals, such as beginning teachers, mentoring relationships can offer support and feedback, and prepare them for successful entry into the “real world” of the school and classroom. Beginning teachers are particularly vulnerable because they lack experience in managing and teaching large groups of learners, while simultaneously coping with assessment demands, curriculum changes, lesson planning and being responsible to multiple stakeholder groups (parents, students, the community, school administration, etc.). Typically, pre-service teachers complete a series of field practicum experiences before they become qualified, and it is during this time, when they are separated from their own teachers and classmates for the first time in their program and forced to work alone, that they are most in need of support and feedback on their professional competencies.

E-mentoring in teacher education: Integrating technology effectively

A further development has been the move towards electronic mentoring (e-mentoring) programs and initiatives. Single and Muller (2001, p. 108) define e-mentoring as:

... a relationship that is established between a more senior individual (mentor) and a lesser skilled or experienced individual (protégé), primarily using electronic communications, that is intended to develop and grow the skills, knowledge, confidence, and cultural understanding of the protégé to help him or her succeed, whilst also assisting in the development of the mentor.

Watson (2006) reports that the most common reason for the failure of mentoring is the presence of time and place constraints. E-mentoring allows greater flexibility than traditional, face-to-face mentoring since it is time and place independent, and as such is a medium through which every education student can benefit (*ibid.*). Single and Muller (1999) identify a further advantage in that “communicating using email allows for the construction of thoughtfully written messages without the pressure of immediately responding such as in communicating orally” (p. 237). This also can be said to apply to other forms of asynchronous computer-mediated communication (CMC) such as discussion boards and blogs.

Other benefits of e-mentoring include the development of open and supportive relationships and friendships, and greater cohesiveness within the learning group. Bierema and Merriam (2002) identify the egalitarian nature of e-mentoring, and propose that there is a possibility for relationships to cross boundaries of space, time, geography and culture. Applied to work-based learning, this provides greater opportunities for participants to connect and interact with colleagues in and across a variety of settings.

Although some authors argue that informal mentoring relationships with frequent contact achieve better results than formal relationships (Ensher, Heun & Blanchard, 2003), e-mentoring is quickly gaining popularity in formal teacher education and professional development programs. In recent years there has been an explosion of free, publicly-accessible online mentoring web sites offering access to collegial advice and services across a range of professional groups in the education sector. One such site, Tapped In (SRI International, 2007), aims to “expand face-to-face programs to include online activities and content that engage teachers anytime, anywhere”.

Single and Muller (1999) advocate the use of a structured approach to e-mentoring when operating within a formalised program environment, providing systematically designed training, guidance and scaffolding to promote engagement and enhance the experience of participants in the e-mentoring process. Structured mentoring depends on program evaluation to determine the impact on participants so that future improvements can be made. An example of structured e-mentoring can be seen in the case of a cross-institutional project involving two tertiary institutions in Singapore, Nanyang Technological University and Singapore Polytechnic (Cavallaro & Tan, 2006). The aim was to develop scholar-mentor relationships between students undertaking report writing classes at the two institutions. Participants were provided with guidelines and instructions as they completed collaborative writing tasks in partnership with their peers, and engaged in both synchronous (chat) and asynchronous (discussion board) communication through Blackboard. The activity resulted in substantial learning benefits to all participants.

In an example within the domain of teacher education, a program was established involving the pairing of pre-service teachers and practicing teachers in the south-eastern United States (Watson, 2006). The program provided “rich” field experience for the student teachers without the normal problems that face-to-face mentoring would entail. Despite some technical difficulties, students found the project to be an effective means of support in “issues pertaining to sociali[s]ation, learning environments, assessment/evaluation and paperwork, classroom management/discipline, curriculum/resource materials, time management, teaching strategies, certification, legal concerns, special needs, students, new teachers and [discipline/subject area] specific content” (p. 175). The success of the online mentoring experience transferred well to education between pre-service and experienced teachers.

With the above in mind, e-mentoring is not without its problems. For instance, the goal of the Novice Teacher Support Project Online (Klecka, Clift & Thomas, 2002) project was to provide a “sustainable, cost reasonable e-mentoring system for beginning teachers” (p. 4). The findings of this project highlight one of the major difficulties in an asymmetric e-mentoring relationship: without set, face-to-face meeting times, responsibility for initiating discussion and maintaining the relationship fell largely on the shoulders of the protégé. Ensher et al. (2003, p. 276) identify five key challenges related to mentoring in an online environment:

1. likelihood of miscommunication (through misunderstandings, flaming, coldness of the medium);
2. slower development of relationships online than face-to-face;
3. requirement of competency in written communication and technical skills;
4. possibility of technology malfunctions; and
5. issues of privacy.

Arguably, many of these challenges can be mitigated through appropriate training. Additionally, multiple methods of communication should be employed, and issues such as confidentiality must be carefully considered and communicated to all those involved.

Locating P2P e-mentoring of pre-service teachers within a community of practice framework

Most researchers agree that teacher education is involved, complex and multifaceted. In the preparation of novices for the teaching profession, an enduring challenge is to create learning experiences capable of transforming practice, and to instil in new teachers an array of professional skills, attributes and competencies (Putnam & Borko, 2000). Another dimension of the beginning teacher experience is the need to bridge theory and practice, and to apply pedagogical content knowledge in real life classroom practice. Teachers have the onerous and daunting task of enabling their students to develop the knowledge and skills needed for further education and employment. During the critical time while on field practicum and in the early stages of their professional careers, novice teachers need someone who can provide feedback, emotional support and advice. Cochran-Smith and Lytle (1996) state that what is needed is a forum for the voices of the teachers themselves, the questions they ask and the ways they use writing and intentional talk in their work lives.

Professional development and learning for teachers is, in reality, a lifelong, career wide, context-specific enterprise that is guided by mentors at various stages, grounded in practice and focused on continuous learning that is both reflective and experiential. It is described by Schlager and Fusco

(2004) as “a process of learning how to put knowledge into practice through engagement *in* practice within a community of practitioners” (emphasis in original). In other words, professional growth requires engagement and dialogue with a community of like-minded peers, and it is a social and self-critical experience. Lave and Wenger (1991) argued that learning is situated in social contexts and is achieved through interaction and practice with others with similar professional interests (communities). The term “legitimate peripheral participation” refers to the process by which newcomers become part of a CoP through apprenticeship, or learning from others with greater expertise. This socially based theory of professional learning implies that individuals learn by engaging with and contributing to their communities, and is also linked to the notion of socialising into a “Discourse” described by Gee (1992; 1996). In addition, existing community members learn and refine their own practice through teaching apprenticeships for newcomers.

Drawing on the notion of a CoP, schools may be viewed as sites where there are social groups and social capital dedicated to the transfer or flow of skills and practices from one member to another. As part of their enculturation into schools, teachers need to communicate and share ideas and to become part of the school “learning community”. Another perspective is offered by Mitchell (2002), as follows: “Communities of practice are groups of staff bound together by common interests and a passion for a cause, and who continually interact ... [They emphasise] the development of members’ capabilities and the building and exchange of ideas” (p. 5).

Researchers commonly adopt the phrase “participation in a community of practice” as the key factor and defining quality of professional development, as networking with other practitioners is often a catalyst for change, performance improvement and professional growth. The most fundamental point, however, is that a “community of practice” is not a synonym for a group, a team or random collection of individuals. The key ingredients are mutual engagement and reflection. These goals are realised through dialogue, a common focus and sustained interaction, and are achievable through a peer mentoring process in which dyads communicate, share ideas and support each other through reciprocity and offering feedback/advice. Thus, the framework of a community of practice was deemed to be an appropriate theoretical basis for the present study of peer-to-peer e-mentoring as it is characterised by a focus on student learning, peer collaboration and reflective dialogue, and enables social support for teacher professional development.

Forms of professional learning in community of practice

In the initial work of Lave and Wenger (1991), learning within a CoP was portrayed as a form of apprenticeship, where novices engaged in “legitimate peripheral participation”, and where theory gained insights into new forms of knowledge and community practices. In his later work, Wenger (1998) stated that a CoP may be defined by its core dimensions: *meaning* (through learning as experience); *community* (through mutual engagement, joint enterprise and shared repertoire); *identity* (through learning, and use of shared resources); and *practice* (shared goals, and learning as doing). Mutual engagement is especially important, because practice does not exist in the abstract, but instead exists because members engage in actions whose meanings they negotiate with one another. These four dimensions represent the components of professional learning within a CoP and are depicted in Fig. 3.

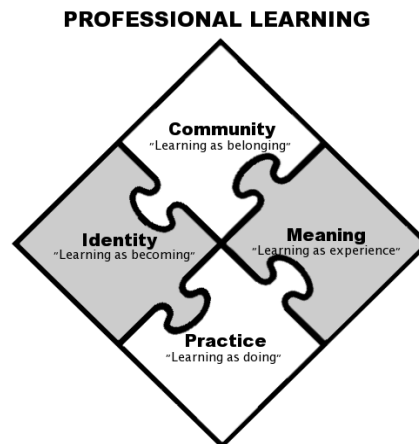


Figure 3. Components of professional learning (based on the work on Wenger, 1998)

This social framework for learning is achieved through dialogue and participation in activities of the community where there is mutual accountability, as members attempt to seek new meanings. The four dimensions have been applied in studies of expertise development through apprenticeship ranging from midwives in Mexico to butchers in the United States, as well as members of the health professions (Moule, 2006). It was therefore considered to be an appropriate theoretical framework to underpin the present study of a peer e-mentoring network, in which student teachers engaged in online discussion, feedback and sharing of ideas with the goal of increasing self-understanding and competence.

The study

Background, context and participants

The research study described in this paper involved pre-service teachers using asynchronous CMC tools for purposeful dialogue during their student teaching experience (practicum). This study was designed to evaluate the impact of sharing critical incidents using these tools on the development of a learning community amongst the pre-service teachers, who formed peer mentoring dyads.

As previously mentioned, the study was conducted within the context of a restricted network of pre-service teachers enrolled in a postgraduate program in secondary education. The size of the cohort that formed the convenience sample for the study was 19 students. The age of the students ranged from 22 to 43 years, and some had already had teaching experience. The students' information and communications technology (ICT) expertise and comfort level ranged from those with adequate experience and comfort using the Internet for communication, to those who felt very comfortable and used Internet-based CMC tools on a daily basis.

Research methodology

Data collection procedures

During the course of their four-week practicum, each participant was required to reflect and report on a total of three critical incidents that occurred in his/her classroom, in both text and voice formats. Each week, the participants were asked to write a 200 to 300 word report, as well as to produce a 90-second voice recording containing different content to the written report, about a significant critical incident, issue or problem that occurred during that week. The report was to include a description of the context of the incident, as well as an account of both the actions of the students in the class and the student teacher. In addition, the participant had to identify questions or areas in which he/she required advice or assistance, inviting his/her peers to respond.

On a weekly basis, each participant was also asked to respond to at least one other student teacher in writing as well as orally, commenting constructively on his/her postings and providing helpful comments and support. The author of the original posting in each case was also to respond to the feedback received. Two lecturer mentors, including the coordinator of the practicum unit, also provided a limited amount of input into the discussion, particularly during the early stages of the exercise.

At the conclusion of the practicum, the participants completed a capstone task in which they each created a two-minute podcast recording, reflecting on the highlights and challenges of the practicum experience. The final podcasts were shared with the entire student teacher cohort at a face-to-face debriefing session, at which time semi-structured focus group interviews were conducted to elicit further, retrospective accounts of the participants' experiences. Discussion in the focus groups centred on their views of the peer-to-peer e-mentoring activity and the benefits it afforded, as well as the difficulties encountered and how these were overcome.

Technology framework used to support P2P interaction

For the text-based components of the exercise, the participants used a blogging facility within the Blackboard LMS (Fig. 1). Although blogs were originally designed to allow individuals to maintain their own personal journals or diaries and make them available for public viewing, shared or multi-author group blogs have found numerous uses as CMC tools to support learning. Such blogs can serve as powerful collaborative and shared publishing applications for generating dialogue and promoting the sharing of ideas (Lee, 2005).

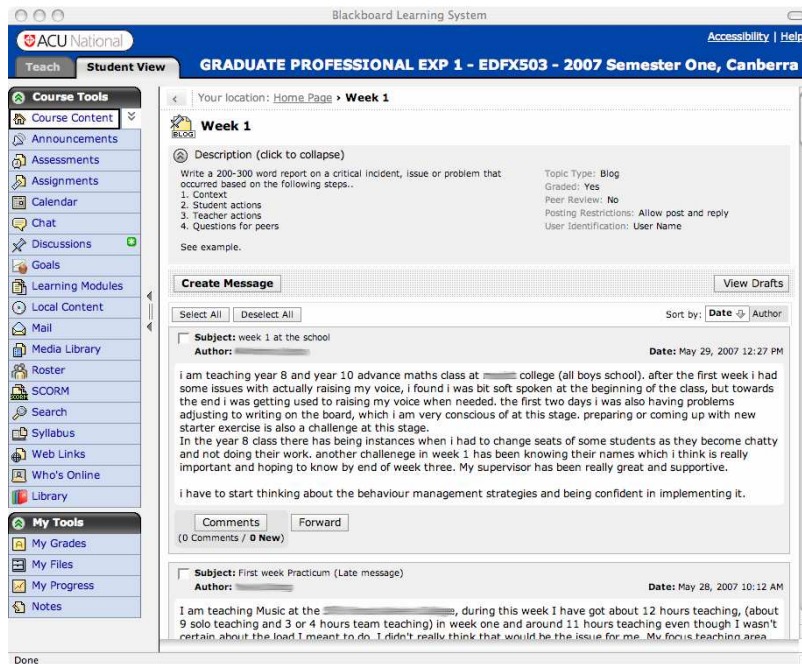


Figure 1. Blackboard-based blog

To facilitate voice-based peer-to-peer interaction, the students used the Wimba Voice Board (Wimba Inc., 2007) tool. This tool allows the creation of threaded, asynchronous audio discussions that are also integrated into the Blackboard environment (Fig. 2). A major advantage of the Wimba Voice Board is that apart from standard voice recording and playback equipment (sound cards, headsets and microphones), it requires no specialised software other than a Java-enabled web browser. It also simplifies the process for users, by providing an easy-to-use, browser-based recording and playback interface that eliminates the technical overhead of having to use separate applications to record, edit and upload/download the audio content.

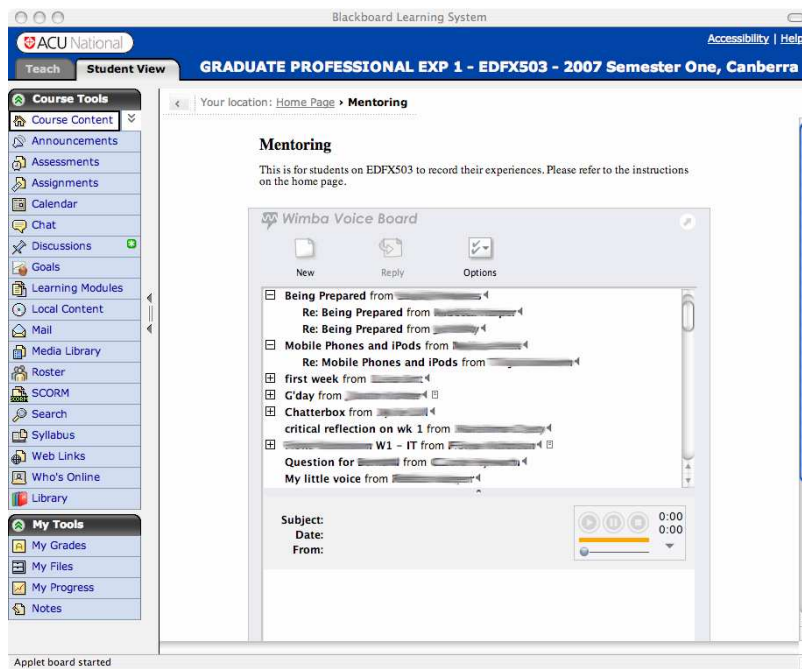


Figure 2. Wimba Voice Board in Blackboard

A face-to-face training session was held immediately prior to the start of the practicum, to assist participants in becoming familiar with how to use the web-based tools to participate in the activity, as well as to provide advice on how to plan and structure their written reports and recordings. At this time, they were also issued with headsets with built-in microphones, for use with the Wimba Voice Board in their respective schools or at home. In addition, they were given a structure to follow and urged to script their voice-based contributions before recording in order to ensure that they did not exceed 90 seconds in length.

Data analysis procedures

Content analysis was chosen as the method for analysing the participants' discourse, both written (blog, scripts) and oral (Wimba Voice Board, focus group discussions – these sources were transcribed in order to facilitate the analysis). Content analysis has been defined as “a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding” (Berelson, 1952). Originating in communications research, content analysis is a generic name for a variety of means of textual analyses that involved comparing and categorising a corpus of data (Krippendorff, 1980; Weber, 1990). Content analysis enables researchers to sift through large volumes of data in a systematic fashion using categories or discourse markers to assign features to data segments. It can be a particularly useful way to allow researchers to discover and describe the focus of individual, group, institutional and/or social attention (Weber, 1990). Today, content analysis techniques are widely used in the analysis of computer conferencing transcripts, and now combine qualitative and quantitative approaches, which involve not merely counting the occurrences of variables, but also interpreting them through particular theoretical lens. Hara, Bonk and Angeli (2000) endorse this dual approach, noting its capacity to “capture the richness of student interaction” (p. 119).

In relation to the first research question (emergent themes of discussion on the blog and voice board), a simple thematic content analysis approach was adopted. All messages were first read at face value to produce a preliminary (candidate) list of themes or issues that were identified by the participants in the critical incidents recorded. This list was gradually refined as subsequent passes were made through the data, with the content being reviewed in greater detail and common strands factored out. As part of this iterative process, categories were added, deleted, renamed, combined and divided as necessary. Eventually, each response was categorised according to the themes/issues identified, to reveal those themes/issues that stood out as being the most pertinent, or worthy of mention.

To identify the elements of a CoP that were evident in the peer-to-peer e-mentoring relationships (research question 2), the researchers applied an approach derived from Berelson's (1952) content analysis approach, described as “a research technique for the objective, systematic, quantitative description of the manifest content of communication” (p. 18). They first reviewed the literature on e-mentoring use with pre-service and in-service teachers, to identify data categories of previous research to use initially to code the data. Using Lave and Wenger's (1991) conceptual framework, the main focus was to identify the discourse elements of community, identity, meaning and practice and their subcategories (Fig. 1). The students' focus group discourse was used to explore issues and patterns that were indicators of a learning community. In content analysis, a fundamental issue for the researcher is the choice of unit of analysis, with a choice of, for example, sentences, messages, propositions or thematic elements. In this case, the unit of analysis chosen was the turn at talk, which in some cases contained more than one meaning unit and was coded accordingly. Evidence was thus sought in the form of units of meaning or phrases in which the participants expressed a view that contained explicit statements of their experience in the peer-to-peer e-mentoring activity. These were categorised according to the principles of a CoP (Fig. 1). Two researchers coded the data in the focus group transcripts and compared the results as a measure of coding reliability.

Results and discussion

Research question 1: What were the emergent themes that were the focus of discussion in the students' discourse using the blogging and voice discussion tools?

The thematic content analysis of the data from the blog and Wimba Voice Board revealed that the emergent message type categories were as follows:

- *Classroom practicum experience:* Statements referring to a difficult event that occurred in the classroom;

- *Pedagogy*: Statements pertaining to general pedagogy;
- *Classroom management*: Statements relating to issues in managing student behaviour;
- *Nature of teaching*: Statements relating to the role of the teacher, and/or expectations of the teacher;
- *Support*: Statements referring to support, including receiving or giving support, within the school during the practicum;
- *Concern for students*: Statements pertaining to the welfare/learning approach of students;
- *Reflections on self-efficacy*: Statements or descriptions of the student teacher's view on his/her effectiveness as a teacher;
- *Resources*: Statements in which student teachers talked about resources, including teaching ideas, general information or instructional strategies;
- *Lesson planning*: Statements in which a student teacher discussed the need for planning in advance of the lesson;
- *Emotional reactions to classroom occurrences*: Expressions of surprise / positive and negative comments on the events and interactions in the classroom;
- *Future speculation*: Student teachers looking ahead and commenting on future plans for teaching based on their initial experience.

Research question 2: Overall, what elements of a community of practice were evident in the peer-to-peer e-mentoring relationships that were formed?

As stated earlier, the categories identified in the theoretical framework (Fig. 2) were used to code the transcripts of the semi-structured focus group discussions. The results of the analysis are summarised in Table 1. Overall, student comments focussed on the benefits of sharing experiences on their school practicum through the CMC tools provided. The majority of comments were related to aspects of established common ground, engagement with others and building of rapport. The results showed that students developed some elements of mutual engagement, joint enterprise and shared repertoire.

Table 1. Focus group results showing categories of socio-professional learning

Component	Explanation	Examples from student discourse	No. of message units
Community	<ul style="list-style-type: none"> • Belonging • Mutual engagement • Joint enterprise 	<p><i>"On the first posting I feel that if I did have someone who was doing the same thing as me, they would understand more in depth"</i></p> <p><i>"It just sort of helped me when I got home to know that I was not alone"</i></p>	36 (33.96%)
Identity	<ul style="list-style-type: none"> • Learning as becoming • Use of shared objects 	<p><i>"The other thing I liked was just learning new skills"</i></p> <p><i>"Just knowing who is teaching what subjects and what levels so you can share things"</i></p>	26 (24.53%)
Meaning	<ul style="list-style-type: none"> • Participation in community • Negotiated experience 	<p><i>"It was nice to have that community support while we were going through that experience"</i></p> <p><i>"I also see the benefit of having somebody to share ideas"</i></p>	24 (22.64%)
Practice	<ul style="list-style-type: none"> • Learning as doing • Shared goals 	<p><i>"Knowing that everybody went through the same thing, more than once on some occasions"</i></p>	20 (18.87%)
Total			106 (100.0%)

A major limitation of the analysis presented in Table 1 is that it relied solely on students' retrospective reports of their experiences (i.e., from their focus group discourse). In the near future, the authors intend to conduct a more complete analysis that will combine the focus group transcripts with the data

collected from the collaborative blog and Wimba Voice Board, which contain evidence of the students' actual interactions with one another.

Conclusion

The researchers believe that through the use of structured, peer-to-peer e-mentoring activities, supported by a technology framework incorporating suitable CMC tools, a conducive, flexible, democratic and dynamic environment can be established that enables multiple levels and forms of mentoring amongst pre-service teachers. In this study, the provision of Web 2.0-based asynchronous communication tools (collaborative blog and voice discussion board / podcasting facilities) was seen as a way to address the beginning teachers' various needs, and proved to be a catalyst for the development of an online community. Along with appropriate guidelines and scaffolding, the tools allowed participants to converse and interact with one another while on practicum to exchange ideas, share experiences and provide mutual support. The activity fostered reflection on professional growth experiences, as well as providing a solution to help alleviate the problem of isolation. The results show that the highest number of comments and narratives recorded were related to expressions of solidarity with others, sharing experiences, establishing common ground and discovering a new professional identity.

Earlier in this paper, we defined a community of practice (CoP) as a social construct that places learning in the context of lived experience of participation in the world. The relevance and appeal of CoP to teacher professional development is that it provides a sound framework within which to view learning as a social phenomenon. The students' contributions and discourse show that through dialogue and social engagement with others, they learnt not only about the teaching profession, but also about themselves as people in general, and as education practitioners in particular. Applied to the present project, where novice teachers engaged with one another through ICT technologies, the framework serves to unify the main foci of the practicum: for participants to engage in practice, meaning making and identity formation. Adoption of the theory of a CoP is a valuable means by which to understand how teachers develop professionally by tuning in to each others' experience as they become active members of a community, while at the same time continually reflecting on and refining their own practices and skills.

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